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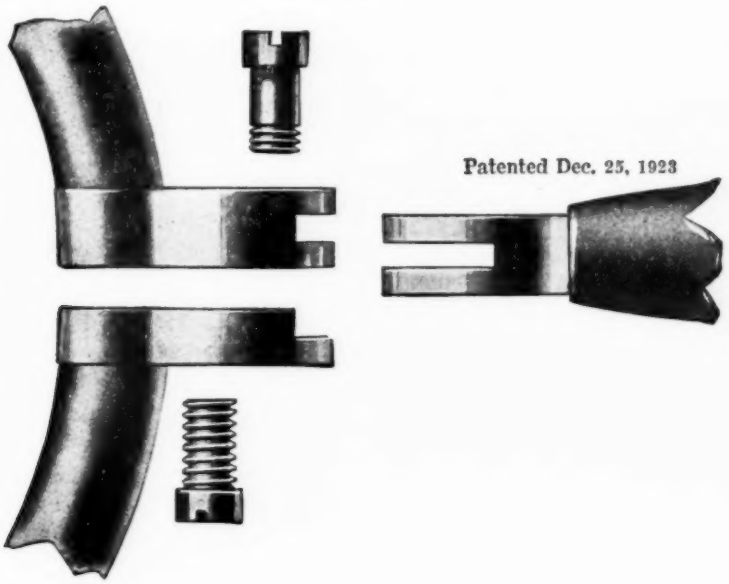

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OPTOMETRIC EQUIPMENT "THEN" AND NOW

F. McFadden, Opt. D., F.A.A.O.
Athol, Mass.

That optometry is moving forward no one can doubt. When we view it in sections we ofttimes have some misgivings of its advancement, or that it is making proper progress, but a general view of the field, as it is practiced in America at least, gives us an impression of advancement somewhat similar to that in many other pursuits. Americans cannot stand still; action, movement, progress is in the air, speed is in our feet, that restless forward urge is all about us and runs through our fibre.

And yet we cannot help but wonder why optometry is not only making a "proper" progress, but **more** progress. It is not because we have already become too ethical, but because we are individually in too grave danger of leaning backward in being "conservative." There are so many meanings of this oft-used word that we can do no better than refer to our method of "adhering to the existing order of things; opposed to change or progress." This spirit is splendid in finance, but applied to modern science it is all wrong.

Modern science is going forward so fast that no one realizes its progress, least of all the scientists themselves, engrossed as they are—and as **we** are—in details. But it does not do for us to either neglect the details of our science nor to fail to grasp its larger import. The very moment we fail to keep up, to go forward, we begin to slip back, and only too soon we are out of step with the vanguard.

The outpost of optometry faces in several directions, guards several important angles, offensive and defensive, having a number of "fronts" which it must cover. It would be useless to attempt to name and describe them all, but none of these angles is any more important than that of proper instrumentation.

Ten years ago instruments for optometric work were scarce, and even those obtainable were very crude; and five years ago it was exceedingly difficult to secure an equipment of instruments which was adequate to the work, which offered convenience, adaptability, comfort, speed, and accuracy. We were practically limited to the cumbersome and highly tortuous "trial frame with loose lenses," the rigid chair, freak wall chart, the little old "hand looking glass" retinoscope, the inconvenient and ofttimes high-heat-potential back-light that cooked the patient's neck while its light boiled the tears out of the optic irrigators. The old ophthalmoscope was about as efficient in its way as a Chinese water buffalo for plowing; while the "candle-flame" and a handful of round loose prisms would almost rival, in efficiency and convenience, the comforts of an Eskimo igloo for a family of ten. Of **some** test charts then in existence, and even now still clinging sadly to our walls, we ought not to speak, since they too often spoke for themselves! Of the illumination upon those charts, if such may be said to exist, we can only say that it may have equaled one-half moon-power and was as red as the light of Mars. About distance, any old range would do, and like Ford, who stated that customers "could have their cars painted any color they liked so long as it was black," our distances could be anything so long as they were short—and the shorter the better, even down to three feet. The ophthalmometer was quite frequently "among those present," but was brought up like the children of old-fashioned families to only speak when it was spoken to, otherwise it was never to be heard. Its lamps often glowed brightly, and was frequently used to flash some uncertain message into the glims of a constituent, but only too often the deep import of that mysterious message has never become public. Truly it was only a deep and unfathomable secret, beyond all human understanding. Some really conscientious objectors

have been known to stack the instrument on a high shelf, in full view of the world, but in a perfectly safe-and-sane place.

The "fitting" was only too apt to consist of now-you-see-it-and-now-you-don't, where the "customer" did all the really scientific work and the "speshulist" conducted a true police court "third degree cross examination" from which he finally wrote out a puzzled and bedeviled guess. Real skiametry, skiascopy, ophthalmometry, phorometry and ocular poise, suspenopsia, and even ophthalmoscopy were guardedly touched upon, slightly investigated, or ignored, according to taste.

Bang! Clang! What was that? Has something fallen? Or was it the scales which began to fall from our eyes? We certainly wish that the noise were all over, that the scales had all fallen, that all optometrists now saw clearly. Optometry is a science, a rising new science, a science which embraces physics, anatomy, physiology, hygiene, machine and human mechanics. The things that were **guessed** at yesterday are things that must be **known** about today. In none of our work is this as important as in the application of experimental lens-powers to the eyes of our consultants. Yesterday we had to be content in the application of a frame with loose lenses. Today we have a piece of apparatus which holds hundreds of lens combinations in a perfectly rigid support which the consultant need not bear up under. The lenses are always clean, they cannot become scratched and worn by shuffling, they are thin, they are held rigidly level, their planes are absolutely vertical, and their pupillary interval is mathematically and mechanically accurate. There is not the slightest chance of a head-and-frame tilt with an introduction of false hyperphoria.

The optometer compels both obedience and co-operation of the consultant. When used in connection with the skiascope, the very warp and woof of our work, its foundation and superstructure, the consultant has no choice whatever but to fix upon a given point and maintain her position while all lenses are introduced. Accommodation **must** be brought under control, held in some sort of restraint, or keyed to some definitive activity while our work is in process, but this is absolutely beyond the bounds of possibility when the optometrist must first remove a lens, then seek out another and replace it. The consultant will usually follow all such near movements in spite of prohibitive warnings, but in any event their accommodation will be stressed and relaxed to some unknown extent for every change made in lenses. Accurate work becomes not only impossible under such conditions, but is unduly fatiguing, takes much more time, and wastes much more energy than when all lens changes are made with one hand rotating lenses into place, increasing lens power, or decreasing it, without intervals of extreme stresses, while with the other hand the skiametrist accurately follows up the effect of each very slight change of power.

The writer challenges an investigator in any field of science, where extremely close analysis must be made solely by visual comparisons of something almost invisible, to name anything so tenuous, so delicate, so subtile as the reflex, particularly when near the point of reversal. His eye must become very accurately dark-adapted, carefully focused, and his mind must also adapt itself to that receptive mood where it is capable of judgment of any possible changes of hue, relative speed of motion, and to any possible astigmatic indications. This is indeed a delicate moment and should not be interrupted. The time required to change loose lenses breaks the dark adaptation which takes much time to reacquire. Both speed and accuracy are interfered with, and the examination time is much extended, greatly to the detriment of our work.

When the old method of covering up one eye while attempting to fully complete the work upon the other was used, then going over the same tedious process upon the opposite eye, a great deal of difficulty and nervous tension is brought into the problem, not only with respect to the consultant, but to the optometrist who must follow this extremely painstaking work for hours at a time.

By the use of modern instruments and facilities, both eyes are refracted almost simultaneously, the refractionist going back and forth from one eye to the other, rolling up lens power or

reducing it as occasion requires, meanwhile the consultant fixing some single object dually, thereby keeping both eyes "open" and under control. Much greater speed is attained, greater accuracy results, no back-and-forth accommodative stresses are introduced, and the skiametric work is finished in a very few moments, whereas the old "hand-trick" method took more minutes than one cares to admit.

This easy and practical skiametric work is an utter impossibility with the old trial frame and a sheaf of loose and worn lenses. The "chagrin" or "bloom" on lenses that have been handled, shuffled, desk-rubbed, and otherwise rendered considerably opaque is enough in itself to render careful and accurate skiametric work wholly out of the question. If to this is added any optical defect whatever in the eyes of the optometrist, he is sufficiently handicapped to condemn the skiascopic method. In practically any case of this kind, if the man would acquire some modern instruments, the refractor and skiascope, and would properly arrange his refraction room, he would soon become one of our greatest enthusiasts. With good instruments skiametry can very easily be conducted in a very light room, but the old method requires a room so dark that he can see through the lens-bloom, dark enough so that he can somewhat more quickly dark-adapt himself after changing lenses—and withal this, his consultant has undergone an enlargement of her iris to such an extent that unfortunate erroneous ocular conditions are introduced into the formula.

With an enlarged pupil we refract the eye largely through the margin of the pupil, but with the iris of normal size again, but having lenses measured to the margin which is now obscured, the one who attempts to wear such lenses often has a grave disappointment, and the optometrist is roundly blamed for lenses that are too strong. If he knows the tricks and failings he can arbitrarily reduce all skiametric findings, but doing so is taking an unknown discount from his own tedious work.

The wheelbarrow and railroad shovel did some history-making work in the "days of long ago," but the steam shovel is making modern history, and changing the face of the world meanwhile.

Modern instruments are just as essential in the refractorium as in the canal, on the railway embankment, in the flying field, in highway transportation, on the high seas, or in communication. Once on a time the post messenger performed satisfactorily, but the railway mail coach superseded him, after which came the telegraph, the telephone, the radio.

Altogether too much refraction is yet done by the post messenger or the mail coach method. In communication the radio is not more expensive than the letter, but is cheaper because of the very essential element of time-saving and of greater accuracy. In an exactly similar way the modern instruments for refraction are not more expensive but far cheaper, since they speed up work, give greater accuracy and satisfaction, thereby as greatly increasing the radius of the activity of the refractionist as does the automobile give the medical practitioner a radius of two score of miles and thousands of families when his old mare could scarcely travel far enough in a day to encompass a few scores of families.

Modern instruments do not cost one cent, since they decrease cost, increase prestige, and pay for themselves hundreds of times out of the very waste, dissatisfaction, do-over, and lost prestige which is inevitable in the practice of "old-school" men. An up-to-date refracting room equipment is far more essential to success than the latest breed of automobile, and it will pay for itself at least one hundred times while the car is acquiring the sophisticated appearance of a two-year-old, acquiring dents, bruises, knocks, and heading in toward the bone-yard. Modern instruments are investments in the strict sense of seasoned bonds, because they bring back the coupon money. They will last for years, and are not old until they have paid for themselves many times in both money and satisfaction.

OPTHALMOMETRY

L. L. De Mars, Opt. D., F.A.A.O.
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In treating the subject of ophthalmometry, I do not feel that I can say very much that is new to you men with your years of experience. I can only refresh your memory some, perhaps, and in so doing possibly help you.

Have you ever examined a detached cornea? I mean one that had been desected away from the sclerotic coat so that you could handle it freely. If you have, you will have noticed how tough it is and how difficult it is to make any impression upon it. Did you ever stop to think of the cornea as the front entrance for the passage of light into the eye? It is here that the rays are first refracted, and, considering its toughness and therefore the inability to change in curvature readily, does it not stand to reason that this surface should always be measured and the results recorded for consideration in working out the final prescription?

Here is the only and the greatest, and therefore the most important curvature of the whole refracting system of the eye exposed for examination, by contact, if I may put it that way. There is no other surface that you can measure with more precision, and yet, this surface is commonly overlooked and neglected by many of those who boast of being precise and accurate in matters of ocular refractions.

The ophthalmometer is an instrument of real precision. It has been abused and neglected because many refractionists have not seriously attempted to acquire precise knowledge of it nor trained themselves to use it with precision. No instrument of its kind will serve truly unless used with care and infinite detail. Great care, in this respect, must be taken in placing the patient's head in front of the telescope and in the proper focusing of the instrument. The technic simply consists of turning the mires properly and reading the dials according to the directions that come with the instrument. A careful scrutiny of the alignment of the patient's eyes before he takes position behind the instrument is always necessary in order to determine if both his eyes are at the same level. If they are not, the procedure is different because then steps must be taken for examining each eye at a different level while the head is in a horizontal position.

There is a chance for error right at the start if the operator takes it for granted that both eyes are symmetrically placed, because in so doing one is likely to obtain a false reading for the axes of the astigmatism. In other words, we make the eyes line up with the instrument and the real chief meridians which may be vertical and horizontal, show oblique directions in the final readings taken.

A very important point in focusing this instrument is the attention given to the crossed hair lines, which you should always do before making a reading through the telescope. These lines are put there to make your work more accurate. First, the telescope should be adjusted so that to the observer these lines are as clear as he can make them. This puts the corneal picture of the observed eye and the retinal picture of the observing eye into exact conjugate relationship so that the operator has a maximum acuity for what he sees on the cornea of the patient. Then if the center of these crossed hair lines is made to fall over the center of the two central mires as each eye is examined, the accuracy for which they were intended will be attained.

Still another thing, before the instrument is set in the primary position, one eye must always be occluded because the extreme convergence induced in looking down the tube of the telescope is very likely to cause more or less torsion of the globes of the eyes which twist the meridians from their true static position, should the instrument be used in a binocular manner.

The use of the ophthalmometer, just as the use of the ophthalmoscope, should come early in the examination because of the nature of the knowledge that can be obtained. In either case we learn but little, comparatively,

about the nature of the refractive condition present, but we learn a lot about the presence or absence of conditions upon which rests the success of results of subsequent examinations and tests. Someone has said that knowledge is power, and I want to say that when one is working toward a certain result it is of infinite satisfaction to know just what you can expect or how near you can or cannot come from the desired result.

We commonly know that the ophthalmometer is used to determine the two chief meridians of the cornea, thus determining the amount of astigmatism. Also whether this astigmatism is with, or against, the rule, but why is it that only infrequently do the other tests concur with the ophthalmometer findings, since the corneal tissue is so tough as to almost render the curvatures permanent? I have in mind a recent case in which the readings of the ophthalmometer, the retinoscope, the phorometer and the final prescription agreed exactly. In this case the patient required O. D. —1.25 D. cylinder axis 30; O. S. —3.00 D. cylinder axis 150, to raise her vision from O. U. 15/70 to 15/15. In this case the patient's eyes were axially emmetropic, and the corneal astigmia was the only refractive error present, and, having little or no accommodation (her age being well over 60 years) there was nothing to interfere with the refraction of the cornea. In the majority of cases, however, the axial diameter of the eyeball is at fault and then the cramps or weaknesses of the ciliary muscles all go to change the aspect of the refraction as manifested by the ophthalmometer.

But aside from the curvature readings there is more information to be gained from the use of the instrument. In other words, from its use you are able to tell, at times, the cause of the subnormal acuity of vision of one eye as compared to the other; perhaps it is caused by a greater amount of astigmia or perhaps it is a scar on the surface of the cornea causing some very irregular astigmatism. The advantage is, that if you know it is there, you will know right from the start that you must take a different course of procedure to get the best possible results.

Ophthalmometry, too, has not yet reached the limit of its usefulness. In the using of the instrument you have probably noticed the difference in the shades of corneal color from case to case. At first I thought it was due to the peculiar light in my room at that time, and at other times I found that it could not possibly be that because these changes in corneal color have occurred in a sequence of cases and there was no reason, from the standpoint of light, that the corneal color should be different. Regarding this, Skeffington says: "The normal healthy cornea gives off a clear, pinkish glow that is noted on our records as 'corneal pink.' When this color is seen through the telescope, the operator knows that he has nothing pathologic to consider, that it is a case of simple refraction. But when the color deepens and shades from deep pink to blurry red, we know that we have some of the various forms of blood congestion that may seriously affect our work. High blood pressure almost surely. Without doubt the sphygmomanometer will be utilized on such patients.

"Probably throbbing headaches that tend to center in the occipital region of the head, frequently associated with so-called 'migraine' headaches, that occasionally physicians even today persist in saying are hereditary. When this very characteristic redness of mire reflection is observed, painstaking care must be given to history and internal conditions. It is the writer's habit to invariably refer that patient to the family physician, and send such physician a duplicate history sheet of the examination. The foundation of assurance laid thereby in the practitioner's own mind makes the additional trouble amply worth while.

"On the other hand, the mire reflection may show a large variation of gray pinks to clear steel gray. This classification includes the 'senile gray' that is well known and is of the same parentage. Invariably it spells lack of proper propulsion of blood to the ocular system. The careful examiner will recognize that there are any number of causes that will bring this effect into play, and by classifying in his own mind and by his own nomenclature the different and changing aspects of

the corneal color reflexes, and maintaining careful oversight of his case histories, he will gradually become more and more expert in his ability to diagnose by 'color reflexes.' As a case in point, anemia of the ocular system, from any cause, has a characteristic gray that is distinguishable at once. Other causes of decreased blood supply have similar definite color stigmata, not always so easily recognized, but distinctly individual and classifiable."

Now, therefore, we have learned; from our ophthalmometer to measure the corneal curvatures; to note the presence or absence of corneal injuries or abnormalities; and our slight knowledge of color reflexes has told us that the eye is or is not diseased or is or is not lacking in proper blood supply, and we are now free to determine whether or not the cornea is capable of correctly focusing transmitted light.

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OPTOMETRY:—AS I HAVE HAD TO PRACTICE IT

Dr. Charles P. Cleaves, Minister of the Gospel and Optometrist, of the "Center Harbor Service" Center Harbor, N. H.

I had just emerged from the cyclone of the so-called "holiday season" in which to the usual ministerial duties were added Christmas rehearsal, Boy Scout manipulations, optical service, annual meeting details, and personal and family Christmas aims and accidentals; including a vigorous slap of the automobile, side-down on a skiddish hill, 20 miles from home, on a road of ruts and snow, on Christmas afternoon—bruising me into self-consciousness and disturbing the repose of the back-seaters, requiring next day a forenoon's work in the garage and four hours on the return home, conducting a fight between freezing weather and an icy boiling radiator; followed by Sunday services that demand preparation in the busiest weeks and the poise of personality before an audience. Then there came from the editor of the American Journal of Optometry an invitation that moved me with quiet mirth: "Give us a paper on optometry as you have had to practice it!" And from a ministerial association a call for a talk on "Conservation of the Eye; this comes with the authority of a draft call."

So spins the kaleidoscopic wheel to which we gear optometry. A dare to be an emergency man, a demand to be master of one's profession; ignoring the danger of a split in one's infinity, a fall between two or three possible peaks of success. I reflect that the optical men who work most prosaically in their daily office routine have also to gear their calling to their personal problems and perplexities and wish I might so write that each of them might chuckle over his job. It is a fine and notable task that we have to do for this generation.

Why do I have to do it? Out of such early experience as Augustine's, Sheard's, Woll's—a boy's defective eyes. After long search, a kind oculist's relief. I had to qualify in optometry to care for my own vision, then came the urge of experience, sympathy, preparation, an inward passion to relieve other eyes. There are high self-interests. In optometry we are fortunate that two interests, success and service, so combine in a sympathy for fellow-men. The vision of what optometry has done, is doing, has yet to do; whether in the mass effect or in the minutiae of patient care that the optometrist spends over a single case—that vision must hearten the men whose routine is duller and less diversified than mine and inspire the leaders of the profession.

* * *

What does the American Journal of

Optometry want of me? A discussion, perhaps, of this relation of a professional business and a ministry. The combination is not in my vocation only. Industry combines both. Hosts of citizens, whatever their occupation, make it a ministry and in addition join themselves to distinctive orders, churches, synagogues, activities, and schools that express and cultivate the spiritual and ethical life. Fraternal relations with optometrists deepen my appreciations. The line between spiritual and physical service—however you may phrase the distinction between the mental and the material—is distinct, however, and invites some illustration from this combination of professions.

As a social service employee a minister optically interested would naturally find a way to channel optical cases to optical offices; and would be a promoter of school and charity clinics, influencing the choice of the best practitioners for local service. My work lies among hill towns and scattered people. Optometry has not drawn so many people as dentistry to attention to their own need. There are the old folks, the neglectful and the poor. No man would hang on his walls a quartette of frames—college and divinity diplomas, exemption and qualification certificates in optometry — without counting each an open door and a demand. In fact, that is why we are here. It is an open country mission.

One problem of this twofold community relation is that each case must be guarded from failure and from appearance of selfish gain. I have had that delicate task long enough to sympathize with the doctor and the optometrist. Especially since this work stands, not as a side line but as a distinctive branch of the social service in which the pastor is the employee of the church. In sixteen years of optical service the disappointments have been gratifyingly few, while the gratitude and considerateness returned by the patients has encouraged the relation. The method is fitted to that relation.

The method is the method of the open door. Cases come by recommendation, as they come to you. In the drug store below hangs the framed reminder of "Center Harbor Service," the sign, "Optometrist," is at the foot of the street and on the house corner. A public lecture outlines the conversation of vision. The weekly paper carries the professional card. A circular is supplied "To Inquirers." No time is spent on promoting. The demands of this varied ministry fill the time.

But there is an essential promoting of it. I think you men with your business procedures, single interest and concentration have advantages over mine in reaching some of the indifferent. I only tell you how I have had to practice optometry, in the technic.

First, with the sense of the value of time to the individual case—not too much——but enough. You men with crowded waiting rooms appreciate the sad reflection of a medical friend who was asked by a boy: "Why do so many sick people die?"—"We try to do too much business." The normal remedy is sometimes urged: "More time—more charges." In my work that ideal hardly fits. But the time must be given. A hyperopic patient is a bundle of set conditions and habits, physical, mental, occupational; of mind, work, lighting, feeding, thinking; with a hypertrophied and perhaps sensitive ciliary, sympathetic with convergence—all the complexity of the single case, the diversity of many cases, you know. Repression service may require weeks. But the office hour provides for an accurate start in procedure. Swift routine is sometimes urged that it may not "tire the patient." But I find the slow and adapted routine more often relaxes patients' eyes, quickens neural processes and assures normal action. Then, too, one has the resources of a diversity of tests and instruments and inquiries, according to the case. There lies our success in cases that come from a weary round of offices and years where they went by travel and their time was short. It is not easy for some to understand why they are continued cases—that it is not because we are experimenting, but from the nature of the case.

That is why in most cases I teach the patient by wall charts the nature of his errors and treatment. Moreover—why should they not understand their machines? Some, of course, are incapable of it, lack mechanical genius, must run the auto to the garage, the body to the doctor, for every point of

advice—even intelligent persons. But we may aim to enlarge the individual's understanding and care of his own body and mind.

Secondly, some cases must be hunted out and pursued to the finish. Now, it is not always a thankful task. It is a curiously interesting study—the psychology of the individual case. The majority of applicants are prompt in gratitude and payment. Hunting out a neglected case of refraction as a ministerial service to a child, or to aid in converting a defective into an effective citizen or social worker often shows how much we have to deal with defective human nature. But our work aims not merely at the survival of the fittest, but the fitting of the unfit. A few cases illustrate both the method and the treatment:

Patient, J. D., aged 10. Hyperopia. Strabismus. Wearing O. D. plano, O. S plus 50 axis 90. Requires plus 2 sph. Shortly increased to plus 2.50. Fourteen months later, plus 3.50 O. U. Eyes orthophoric while glasses are worn. Parents not keen in responsibility, case carried at cost in hope of the boy's future.

Case of P. B., girl, aged 10, similar. Eyes became orthophoric, no payment. A child worth the investment. She may profit by it and ultimately appreciate—the operator will not know.

Mrs. J. A. Cripple. Lead poisoning. Thinks vision failing. Can read little. Visit discovers merely refractive errors—hyperopia and presbyopia. Fitted and continued at cost for several years, last pair, owing to her failing condition, no collection.

Mrs. C. T. Deaf-mute. 55 years. Residence ten miles out, office patient. Examination shows plastic iritis of seven years ago. Wearing minus with plus segments. Faint hyperopic shadow—visual acuity low, adhesion of iris. Fitted with plus for distance, addition for near, carried fifty miles and return at cost of transportation for consultation, to dentist for removal of roots and decaying molars, the probable origin of her iritis.

Two self-reliant cases, incomes very low.

No. 1 52 years, neglected presbyopia, slight astigmia; objectively, plus 50 ax. 90; subjectively, O. D. plus 75 ax. 105, O. S. plus 50 ax. 75. Hypertrophied ciliary, irregular activity, relaxation by spheres or cylinders not acceptable till beginning at plus .25 spheres. Continued.

No. 2, 80 years. Diplopia followed exhaustion. Recovery after several months. Wearing plus 3.50 for near, fitted before illness by X. Y. Ophthalmoscope: cortical cataracts. Retinoscope: plus 50 far, plus 3.25 near. Muscular tests (diplopia seldom now), no phoria, duction good. Confirms physician's report: No paralysis, nerve exhaustion.

A widow with children, working manfully upon a farm—arriving so blinded from headache and eyestrain as to require relaxing lenses and a half hour's rest to relieve pseudo-myopia; gradual repression treatment till her final plus pair.

A nurse, retired early with nervous prostration, became a poultry raiser. Supplied at first sitting. "Yesterday I sewed all day upon black—the first time for years." Reported comfort two years later.

I have mentioned one class only. Of course cases usually pay the normal profit and the work is not all romantic. I have cited nothing more than a sample of cases that every optometrist could report. These merely illustrate what we have to do. So the returns add to the instruments. Yet so important in this region is time-saving equipment and the best of instruments, when the temptation to charity is stronger through personal acquaintance and the desire to get a case done that the returns do not wed well to the demands. In fact, they sometimes agree like the lovers who would marry upon bread and water: one to make the bread, the other to skirmish around and find the water. But after marriage the question arose, Who shall provide the dough?

No small credit is to be accorded the church that is far-sighted enough to consent, in its support, to this varied ministry. It is hardly a work to be exploited, like Grenfell's in Labrador, for wide public support. But I sometimes wonder what we might do if some investigative and investing inquirer would lift this work above its frugalities. In any case, we aim to live up to the sign we live under:

CENTER HARBOR SERVICE
Provides a
Registered Optometrist
Experience, Skill and Time
FOR DIFFICULT EYES.

A CASE OF FALSE MYOPIA

C. A. Perrigo, Opt. D.
Fremont, Nebraska

During the holidays just past we were visited by a young lady who is a college student. She complained that her eyes would tire evenings at study. There was little or no headache, although there was a feeling of drowsiness after periods of study.

The binocular vision of the young lady was 20/50, although monocularly it was only 20/100. The phoria test at distance showed not less than four prism-dioptres esophoria and at times it ranged as high as eight and ten. This was without lenses before her eyes. Please note the phoria test was the first step in this case.

The dynamic retinoscope at 16 inches showed a plus 1.50 diopter sphere. By this I mean the operator was 16 inches from the patient and the point of fixation at the same distance. Under the system as practiced by the writer, the above finding, after due allowance for lag of accommodation, would resolve itself into a static finding of plus fifty sphere.

The lateral ductions were normal or nearly so, the adduction at distance being 18 to 20 and abduction 6 to 7. All the findings above mentioned were verified at a second examination.

The last and least important step in cases of this kind is the subjective test. This patient would accept no convex lens of any value and her distance vision began to improve only when I indulged her in minus. With a minus 0.75 sphere it was easy to bring her vision up to about 20/30. Further increase of the minus did not seem to help. The point I desire to mention here is that in pseudo-myopes the distance vision can readily be improved up to a certain point, but beyond that point a concave lens does not help. In real myopia I find it usually possible to give the patient 20/20 vision for distance. I am speaking now of young patients.

If anyone should suggest that I did not get normal vision for distance with this patient because of astigmatism, I would say that the ophthalmometer registered only a half dioptre of corneal astigmatism and under the conditions prevailing any lenticular astigmatism would not be reliable.

After the conclusion of the second examination the writer advised kratometer exercises. I felt a minus correction was out of the question, because if the myopia were real the patient was admirably fitted by nature for study; and if the myopia was not real, minus lenses were out of order anyhow.

The patient was able to visit us only seven times for kratometer exercises during the holidays and then left the city to attend college. We made every effort to stimulate her abduction for distance and also at near and while we were not able to materially decrease her esophoria at distance we were able to improve her distance vision to 20/30 without lens assistance. I firmly believe that had there been opportunity for an adequate course of kratometer treatments I could have dismissed the patient with normal vision for distance.

Let those who indulge (get that word indulge) young patients with weak minus corrections exercise great care lest they add fuel to the fire. We are willing to go on record as saying that it is seldom, if ever, wise to prescribe concave spherical lenses of less than one dioptre value for young patients, especially those attending school. The only condition occurring to the mind of the writer where such a course would be advisable would be where there was a very prominent exophoria for distance.

PRACTICAL NOTES AND CURRENT REFRACTIVE TOPICS

R. M. Peckham, Opt. D.,
Waterbury, Conn.

PRISMS

There is still much misconception and lack of understanding as to the functional use of prisms. Our older books, and a few of the modern ones, tell us to put a prism over "the weak muscle." The complete failure of this treatment brought about the founding of a school of refractionists, both medical and optometric, who said, "Prisms are poison." So this school never used the prisms in their trial cases, even advocated their discard. In one of our university optometric schools, for years the graduates went out in complete ignorance of the use of prisms, because their instructor in practical optometry, a dominant man, belonged to the school of non-prism users.

There is reason in all things. Prisms can be "poison." So can plus lenses. Anything is poison if used in the wrong place. Even milk, the only food that contains all the elements of health food, is proved to be poisonous to some individuals.

We don't talk much about "weak muscles" now-a-days. We have learned that the trouble is not in the muscle, but in the nervous supply to the muscle. Modern physiology studies functions from the biological standpoint more, and human anatomy, as a thing peculiar to itself, less. And in the study of functions, we find the proper use for our prisms.

Put a prism in front of an eye, and the object looked at through that prism seems moved in the direction in which the prism apex points. Therefore, that eye, seeking to place that object's image on its macula for closer inspection, turns toward the prism apex. The muscle under the apex is innervated by the central nervous system, therefore that muscle contracts, therefore that eye turns.

Why the innervation? Because, when that prism was put in front of that eye, the displacing effect of the prism moved the image off the macula. Previously, the macular bundle of the optic nerve, which bundle carries the messages of sharp, clearly delineated, finely detailed images to the brain, had been delivering to its particular brain field that detailed image. Now, with the prism in front of the eye, the image falls on the extra-macular field, which concerns itself not so much with detail as with gross presence and movement. So the message is now delivered to another field in the brain, and, being less clearly defined, the mind sends forth a call for version of the eye so the image will come back to the macula. So the innervation goes forth, and the eye turns.

Therefore, the functional effect of a prism is to compel the eye to turn toward the prism apex.

But every time that a muscle is innervated and contracts, there is an antagonistic muscle that has to relax, it must let go so that the innervated muscle can contract. Innervation is withdrawn from the antagonistic muscle, and this withdrawal is called inhibition.

With the prism apex over the muscle to be innervated, the prism base is over the muscle that is to be inhibited. For there can be no innervation of a muscle without inhibition of its antagonist. Neither can there be inhibition of a muscle without innervation of the other.

So, the functional effect of a prism base is inhibition of the muscle beneath it.

Put a prism apex out (base in) over the left eye and a prism apex in (base out) over the right eye, and you have both prisms pointing to the left. That means that you will innervate the left external rectus and the right internal rectus, and you will inhibit the left internal rectus and the right external rectus, for both eyes will be innervated to turn to the left.

Reverse the prisms, turning them both with apex to the right, and both eyes are compelled to turn to the right, with corresponding innervations and inhibitions.

Put prisms base in over both eyes, and, the apices being out, both eyes are compelled to turn outward to avoid not only the imperfect brain pictures but also to get rid of a consciousness of diplopia. Both internal recti are inhibited, both external recti are innervated. The eyes are compelled to turn their visual axes outward, instead of converging them, as is their normal position when looking at an object.

Therefore, the functional object of prisms base in is to lessen the necessity for convergence. In technical phrase, convergence is inhibited by prisms base in. Naturally, the effect of constantly wearing such prisms, bases in, would be to kill the faculty of convergence.

That is exactly the reason that prisms base in for weak convergence were found to be "poison." And when thus used that is precisely what they are. ***Prisms base in must not be used in cases of weak convergence.***

Turn prisms apex in (base out) over both eyes, and you compel both eyes to turn in. You have innervated the convergence, and inhibited any tendency there may be to turn outward. Wear such prisms long enough, and a strong adduction will be developed.

That is why innervational exercises with prisms base out are helpful in cases of weak convergence. And such exercises, regularly and properly given, will usually lead to the desired result quicker than the prism base out wearing. But in a great many cases, especially those of long standing convergence difficulty, both wearing prisms base out and taking the exercises are necessary. ***Prisms base out are safely prescribed for convergence insufficiency.***

Conversely, prisms base in are helpful in cases of stubborn esophoria, for they relax the convergence, thereby assisting in relaxing the accommodation.

Prisms base in are helpful in any case where the convergence is excessive and is hiding a latent exophoria. Prisms base in are not to be given for the correction of a manifest exophoria, but they are to be used as assistive to plus lenses in uncovering a latent hypermetropia.

Prisms in Myopia

Myopia may be genuine or it may be "pseudo." The latter is caused by a structural defect of a very high exophoria with an emmetropic or slightly hyperopic pair of eyeballs, when the individual develops a close association of convergence and accommodation. In genuine myopia, either the corneal curve is comparatively too high for the anterior-posterior axis of the globe, which might be of less than the normal, or average, diameter. Or, the diameter of the globe might be greater than normal, and disproportionate to the corneal curve. In either event, the images of distant objects are focussed in front of the retina.

Both pseudo and genuine myopia may become progressive. We also have instances of diseases causing myopia, and examination of enucleated myopic eyes shows that staphylomae, stretching of the tunics, may occur. These may become progressive, usually do.

Pseudo-myopia may be lessened, sometimes entirely overcome, by the use of prisms base in. These prevent that convergence which has caused the trouble, and, by relaxing the convergence, tend to relax the synergistically overinnervated accommodation.

When it is desired to thus relax the convergence, one-third of the total abduction at distance can be comfortably worn in the first prescription. Later, as the habit of convergence relaxation is developed and the new habit of orientation becomes fixed, the base in prism power can be increased.

About two-thirds of the cases of myopia thus treated will be found to accept less minus sphere with the same or better vision. About two-fifths of the cases will show marked improvement in vision with prisms base in, but with no decrease in minus sphere strength. The balance will find no change in distance vision with the prisms in place, but will remark greater comfort in reading.

Prisms in Esophoria

The esophore who suffers from headache does so because he cannot readily make the necessary fusional readjustment following the slight diplopia caused by the initial accommodative-convergence impulse which gives him clear vision, and, in the orthophoric person, gives single vision. The esophore must make a negative adjustment of the convergence, forcing both eyes to turn slightly outward from the

first malposition in which they find themselves.

To give the esophore prisms base out makes this readjustment unnecessary for that distance for which the correction was made, but at no other distance. Further, such prisms tend to diminish his ability to make the essential negative readjustment.

If weak prisms base in are given to the esophore, these tend to repress the convergence and dissociate it from its too close association with accommodation. Further, such prisms innervate the external recti, whose lack of innervation is at the root of the trouble. As accommodation is also relaxed, more plus spheres can soon be added to the distance correction.

Treatment of esophoria in this manner, while contrary to the old formula of "prism base over the weak muscle," have been attended with very brilliant results. One prism dioptre to 2 prism dioptres base in are given in the first prescription. In a very few days, more plus is accepted, together with more prism. When the full latent hyperopia has been made manifest, the prisms are step by step reduced in power, until the final prescription is plus spheres, or spheres and cylinders, without the prism. This final plus prescription is from three to four times stronger than any findings under atropine would disclose.

Prisms in Exophoria

Nearly twenty years ago, the writer was instructed by Enrique Lopez, M. D., of Havana, Cuba, to prescribe weak base out prisms in cases of convergence insufficiency, and for troublesome exophoria. These prisms were found to give immediate relief and after six months of constant wear we found that all convergence difficulties had disappeared.

One prism dioptre base out over each eye is quite sufficient. If the optometrist can add daily prism exercises to this treatment, he will find that it is only a matter of six or eight weeks before the patient can be discharged with a perfectly comfortable pair of eyes.

Prisms in Hyperphoria

It is often stated in lectures and articles in our professional journals, that as to the treatment of horizontal imbalances there is much dispute, but that everyone agrees that a vertical imbalance must be corrected in full.

Like all other treatments with "prism in position of rest," the correction of a manifest hyperphoria with such prisms tends to increase the amount of manifest hyperphoria. More than that, the individual loses his sense of equilibrium, and the final result is usually not happy, although when the prisms are first given a feeling of great relief and comfort is experienced.

For nearly four years the writer has been giving reversed prisms for hyperphoria. For example, in one notable case of a left hyperphoria of 3.5 dioptres, where that prism base down over the left eye had been worn for two years, and the first relief had worn away, the patient being more miserable than at the beginning, we gave 1 dioptre base up to the left eye, thus reversing the innervation. Immediate comfort and relief was experienced, the eyes could do more work without fatigue than at any previous time in the person's life. At the end of six months the hyperphoria had entirely disappeared.

After wearing the base down prism for a year, the patient had been unable to even stand on a chair without dizziness, much less to mount a stepladder. After wearing the weak base up prism a month, he found himself able to stand at the edge of a hundred-foot cliff and look down without fear, a thing he had been unable to do for years.

The Practical Application of Prisms

The functional purpose of prismatic prescription or exercising is to bring about a redistribution of innervation and inhibition among the extrinsic muscles so that their required efforts shall be brought into co-ordination and equality with each other and with the intrinsic muscles.

When this balance and equality of required effort is obtained, each individual muscle becomes an active and equal participant in the functionation of the whole binocular instrument.

Past study has devoted intensive attention to the parts and has lost sight of the whole. We are now beginning to realize that the two eyes are not individual entities, that the various extrinsic muscles have no separate and individual functions, that harmony must rule between all the parts of the mechanism that out of two slightly dissimilar images makes one clear mental impression. To bring about that harmony is the function of prisms.

SPECIAL REPORTS

OBSERVATIONS OF A "KRATOMETER" ENTHUSIAST

Harlan P. Blaine, Opt. D.
Norfolk, Nebraska

My kratometer finally arrived, after waiting eight months for it. Now, surely, after listening to all the praise the salesman gave it, I would be able to sit down, pass the magic bar up and down before my patients' eyes, and—lo—my patients would at once be comfortable, and after a few days of "passing," throw away their glasses and take in the movie without flickering an eyelash, and read all the subtitles without squinting an eye. Surely, this should please my patients, and the shekels would jingle merrily into my jeans.

But truly, someone has said that "we live and learn." I have not lived long, but at that one cannot use even the kratometer a few months without "learning" a little bit. If you do not believe me, get a kratometer (you should have had yours ordered some time ago) and just step right up and "cure" a case of ten dioptres of esophoria, patient seeing without glasses 20/20 O. U., and a plus 0.25 blurs him to a 20/40 line, with adduction of fifteen dioptres and abduction of two dioptres. I tried it—once.

Let me speak of another case of a different kind. Mrs. T., age thirty-nine, distance vision 20/50. Corrected with a plus 1.00 sphere, vision 20/20. Needs a plus 1.00 add for reading. Exophoria at distance sixteen dioptres. Exophoria at thirteen inches, 25 dioptres. Needs a two dioptre base down on O. D. at 20 feet. Absolutely no adduction, and could not make the spot double at all in abduction. When eyes were tired, and used for close work, one eye would turn out, but was apparently straight for distance. Patient did not want to wear glasses for distance.

After working for a few days with the prism bars separate from the instrument, in order to develop a fusional desire, we started to work building up the adduction, and succeeded in building it up to thirty-seven dioptres in ten treatments. Then the patient did not come down for a few days, but when she did come in she was "red hot," and stated that I had ruined her eyes. She was having headache, a thing that she had never had before, also she could not see as well for distance without her glasses as she had been seeing before, and talked along that line for over thirty minutes. My office was full of waiting patients, and she did not give me a chance to get a word in edgewise. She finally left, madder than a wet hen, leaving her glasses with the instructions that she wanted her old lenses replaced in her frame. What else but a headache could she expect? We had just built the adduction up enough to balance the abduction so that she could get binocular single vision at the near point, but not strong enough to maintain this balance without fatigue. Hence the headache. But at that, it demonstrated to me the wonderful opportunity of being a great benefit to mankind, when we have the complete co-operation and confidence of the patient.

A patient of mine who is a friend of the above was in a few days after, and asked how I was coming with the new instrument. My remark was short—sweet—and to the point. It was simply, "I have had some very successful cases with it. I have had a little grief also. But in every case where the patient paid in advance, it has been a success." And that is literally true. If the patient pays in advance, he will come until he is through. If he does not pay in advance, he will not come long enough to get satisfactory results. The above mentioned patient has not paid for her treatments up to this date.

I have "lived" but a short while since getting my kratometer, but I have "learned" a lot in that short time. I have learned what not to tackle, what not to promise, and to get my fees before starting, or I won't start. I recall a story of the Chinese laundryman

who tried to learn the American language. The first thing he learned was, "No money—no shirty." But on the other hand, in the few short months that I have had my kratometer, I have learned to love it. I use it as a diagnostic instrument, as well as a treatment instrument. I have learned that many a patient who would accept a plus 0.50 sphere with comfort, who has weak adduction, can get real comfort with a few treatments, without glasses or lenses being used.

I have a case of a man thirty-three years old, vision 20/100, a true case of "tubular" vision, as he sees all the time as though he were looking down a barrel of a gun, and cannot see either to the right or left, complicated with as pretty a case of suspenopsia as one would ask for. Under treatment, he can now fuse objects at the near point, and is coming along very nicely.

I would not be without my kratometer. It is one of the finest instruments in my office, and one of the most necessary to me.

REFRACTIVE COUNSEL

Dr. R. M. Peckham, Optometrist, of 111 Bank Street, Waterbury, Conn., will answer in these columns questions regarding difficult refractive cases. Our readers are requested to send him full particulars of each case, which will be published along with the reader's initials only. These questions and answers will appear monthly. Also in this department Dr. Peckham would like to receive the accounts of unusual cases which have been satisfactorily handled, which will be published, if accepted, over the practitioner's name.

Question: Young woman of 17. Unable to see across the room plainly. Punctum Proximum without lenses, 10 inches. Amplitude of Accommodation 4 D. Convergence Punctum Proximum, 4 inches. Ophthalmometer, 0.50 D. astigmatism with the rule, axis 90.

Orthophoria at distance without lenses. Static retinoscopy gives O. U. —0.75 D. Sph. Dynamic retinoscopy gives O. D., + 1.25 D. Sph., O. S., + 1.00 D. Sph.

Subjective test O. D., —1.00 D. Sph. Vis. 20/XXX; O. S.,—1.00 D. Sph., Vis. 20/XX. With these lenses, 6 degrees of esophoria.

Abduction at distance 2 prism dioptres; adduction, 21 prism dioptres; superior duction, 3 prism dioptres; inferior, 3 prism dioptres.

Dynamic cross cylinder test at 20 inches gives addition + 0.50 D. Sph., to equalize lines; with + 1.00 D. Sph., addition for 15 inches.

With distance correction, —1.00 D. Sph., in place, cannot read better than 1.25 Jaeger. Reads nicely at 15 inches with + 1.00 D. Sph., added (which produces Plano for reading), but distance vision is but 20/CL.

Gave plus 0.25 D. Sph., O. U. with + 1.00 D. Sph., add, in bifocals, for one month's trial.

Returned in month and showed same as before on distant chart and reading. No complaints, save that could not see at distance, but could read very nicely. Static and dynamic retinoscopy gave same results as before, ductions and phorias same.

Subjective test gave O. D., —0.75 D. Sph. () —0.50 D. Cyl. Axis. 60; O. S., —1.00 D. Sph. () —0.50 D. Cyl. Axis 180. Vision 20/XX in both eyes. Took + 2.00 D. Sph., addition to read at 15 inches. With minus compounds could not read better than 1.25 Jaeger. Gave minus compounds with + 1.00 D. Sph., add for a month's wear. (G. C. F.)

Discussion: This is a typical case of accommodative, or pseudo, myopia. This is proved by the fact that dynamic skiascopy gives a plus correction, that the use of minus spheres for the distance correction produces 6 degrees of accommodative esophoria, that reading is poor with minus lenses, and a plus addition is required.

The astigmatism found in the second subjective test is due to sectional, or meridional, accommodation, induced by the esophoria producing minus lenses and the struggles of convergence and accommodation to regain balance.

The correction in this case is not minus spheres, but prisms, base in. These will repress the high convergence used, thus relaxing the associated accommodation. The refraction is either emmetropic or it is possible that there is a low hyperopic error. If the latter is true, it will become manifest following proper treatment.

The only difficulty presented comes in the low abduction at distance, only 2 prism dioptres. This can doubtless be increased with a little work.

Spend considerable time in working up the abduction. If a kratometer is available, it will give good service on this case. As the convergence is relaxed, accommodation will also relax and clear vision at distance will obtain without minus lenses.

Give as much prism base in for constant wear as can be tolerated. Perhaps in this case not more than 1 degree base in over each eye can be tolerated at first, but in a week more can be added.

Do not give minus lenses to a case like this; it will only be a matter of two or three weeks before vision clears completely. Under no circumstances should adduction tests or exercises with prisms base out be given in myopia.

Perhaps bifocals will be needed, but it is very doubtful. If this case is handled properly, glasses need not be worn for more than a year, possibly less. (R. M. P.)

CORRECTION

In the note on "The Size of the Pupil" in the January issue, page 15, in the first paragraph, the printer makes us say "almost impossible" in place of "almost always possible." The sentence should read, "This peculiarity is so marked that it is almost always possible to declare that esophoria will be found, even before the phoria test is made, if the pupils seem unduly small." (R. M. P.)

BOOK NOTICES

New Books for review should be sent to Dr. E. O. Fjelstad, 209 Yeates Building, Minneapolis, Minnesota. Only Books of such nature as to be of interest to optometrists will be used in this department. Optometric and Ophthalmic publications that have been issued in the past and which are still procurable through their publishers will also be reviewed, from time to time, as space permits.

Slit-lamp Microscopy of the Living Eye. By F. E. Koby. Translated by Charles Goulden and Clara Lomas Harris. 238 pages and 43 illustrations. Philadelphia: P. Blakiston's Son & Co. 1925.

A relatively new science, that of biomicroscopy, has developed a literature of its own. Koeppe's book, in conjunction with Vogt's Atlas, was for long the only authority on microscopy of the living eye. Of late, though, numerous articles have appeared and now Koby has produced a more up-to-date book, which is welcomed by those interested in this new study and the latest method of examining the eyes. The theory and practice of slit-lamp microscopy is clearly explained by the author, and if used in connection with Vogt's Atlas will prove of interest and help.

Chapter I, headed Apparatus, deals with the construction of the slit-lamp and the eye microscope. Chapter II—Methods of Examination, considers the various methods of illumination. Chapter III is on the Phenomena of Reflection of Light by the Ocular Media. Chapter IV—Conjunctiva, being a clinical study of the normal and modified conjunctiva. Chapter V describes the normal, senile and diseased cornea. Chapter VI—Anterior Chamber. Chapter VII—Iris. Chapter VIII—Crystalline Lens. Chapter IX deals with the normal and the degenerating vitreous body.

The book is full of new facts and is a very practical treatise. For one desiring to learn the methods of this mode of examination the book, with the apparatus before them, gives a good form of self-training. After the fundamentals are learned reference should be made to Vogt's Atlas. For practical points and for finesse of work assistance should be sought from others. There is a bibliography at the end of the book, which is quite long, but necessarily incomplete, due to the abundance of recent articles.

E. O. F.

ABSTRACT DEPARTMENT

Optometric and ophthalmic Journal articles and reprints to be abstracted should be sent to Dr. G. L. DuPlessis, 209 Yeates Building, Minneapolis, Minnesota. Only papers of interest to optometrists will be reviewed in this department.

Dynamic Skiametry, Accommodation and Convergence. Nott, I. S. American Journal of Physiological Optics, October, 1925.

After outlining the Sheard and Cross methods of dynamic skiametry, Nott opines that whereas the first method is relatively easy of execution, difficulty is encountered in the interpretation. According to Cross the additional 1.50 dioptre found with his method is latent hyperopia, spasm presbyopia, etc., while Nott believes with Sheard that it represents a normal lag of accommodation behind the convergence. Sheard's method, while more correct is difficult of execution. The author contends that working for a point of neutralization instead of a point of reversal leaves room for an error amounting sometimes to as much as .75 of a dioptre. The author's technic consists in making observation behind fixation at a distance dioptrically equivalent to the normal lag. If fixation is made at 13 inches, observation will be at 16 inches, while with fixation at 20 inches observation will be at 26 inches. While the principle is exactly the same as that of Sheard's method, it permits the placing before the eyes of the full dynamic findings without any deductions. A point of reversal is obtained and lens power dropped to the neutralization point.

Another advantage of this method is the time-saving element; in a great many patients, the static findings being left in place, a neutral shadow is found, indicating a normal lag. Dynamic skiametry in such cases takes the place of a check test, as no further change in lenses is needed.

G. L. DuP.

Eyedness and Handedness. Mills, Lloyd. American Journal of Ophthalmology. December, 1925.

The author reminds the reader that the refraction of both eyes being equal in every respect, one eye usually possesses a sharper sense of definition than the other. This eye is called the dominant eye and is the one that really sees an object in its true position. This condition is not limited to the eyes, but is characteristic of all paired organs of the body as well. The most striking illustration of this monodexterity is handedness, either right or left. The author believes that this monodexterity of man is an evolution of the quadridexterity of other quadrupeds.

The author mentions Parson's "Left-handedness," which has been reviewed in a previous issue of this journal, and is fully in accord with his conclusions that handedness was brought by eyedness. But the predominance of dextrality (right) over sinistrality (left) is still a speculation. However, certain points are developed and here briefly given: There always is a dominant eye and this ocular asymmetry is only part of the general asymmetry of man. Eyedness develops with and determines handedness. The heredity of handedness seems to establish a Mendelian trait in spite of righthandedness training and predominance. There are four groups of dextrals and sinistrals: Pure dextrals, who are right-handed and right-eyed with a cyclophoric left eye (76%). Pure sinistrals, who are left-handed and left-eyed with a cyclophoric right eye (9.3%). Crossed dextrals, who are right-handed (usually by training) and left-eyed (13%). Crossed sinistrals, who are left-handed and right-eyed (1.7%).

The variations in these classes are due to injuries or diseases impairing vision in the dominant eye. Methods of determining eyedness, hence handedness, utilize the plane mirror ophthalmoscope, Maddox rod, rotary prism and Stevens clinoscope.

Conical cornea usually develops first in the non-dominant eye, while anisometropia has little influence on eyedness.

Ocular dominance should be carefully maintained in the correction of refractive errors, particularly myopia.

G. L. DuP.

Origin and Development of Eyesight Survey Committee. The Focus, Rochester School of Optometry. Vol. VI, No. 2, p. 17, 1926.

This is a special report dealing in a general way with school visual survey work in New York state, and specifically with the work which has been done and will be done by a committee of the New York Optometric Association. The personnel of this committee is as follows: Dean Petry, chairman, and Drs. Wiseman, Hall, Cox, Ryer, Woll and Barnes. This group, after a careful study of the work, suggests the following routine for a visual survey: First a retinoscopic examination, next an ophthalmoscopic examination, then the acuity of vision tests, and last the near point and vergence tests. The survey is to be made in teams. No child is to be considered as requiring attention if his or her refractive error is less than one dioptre of hyperopia or less than one-half dioptre of myopia or astigmatism. In students having more than these amounts of refractive error a complete refraction is suggested. T. O. B.

The Motor Vision Problem. H. C. Watts. A. O. A. Messenger, Vol. I, No. 3, p. 11, 1926.

Watts, who heads the National Advisory Commission for Motor Drivers, points out that the American Medical Association has suggested that all applicants for license to drive motor cars be made to pass a physical examination, which would of course include a visual survey. The applicant to pay for this service. This he and his commission believes to be unwise, and in their partial report they say as follows:

"We recommend, however, that the State Highway Departments shall make a certain form of eye tests of all new applicants or of others who are suspected of inadequate vision. Optometry stands ready to instruct highway officials how to make such preliminary eye tests, without charge to the department or to the public.

"Your Commission also recommends that the state officials who encounter an applicant whose vision appears unsatisfactory shall withhold his license and instruct him to consult some refractionist of his own choice in respect to having his deficiency corrected. He may return with his correction or certificate for consideration."

T. O. B.

Environment, Procedure and Technic. E. LeRoy Ryer. Bulletin of the Optometric Society of the City of New York. November, 1925.

This writer describes in some detail a routine refraction and a well-equipped refraction room, and he particularly stresses two refractive points, i. e., first, to make the complete refraction in the shortest possible time; by this he does not mean a hurried refraction, but one well planned, so as to not fatigue the patient; and, second, that we as optometrists should rely more on our dynamic skiametry findings than on our static findings, inasmuch as the former are the true findings of the patient's refractive error.

T. O. B.

Near-Point Tests. S. H. Robinson. Optometric Weekly, Vol. XVI, No. 33, pp. 1435-1437. 1925.

Robinson, in a paper on near-point duction tests, tonacity tests and accommodative tests, claims that in making the latter for the near point it is well to do this very slowly, moving the reading card forward towards the patient at an almost imperceptible rate. He claims that by so doing, one subjects the accommodative apparatus to a sustained effort and thus we more closely arrive at the true amplitude of accommodation. T. O. B.

On the Size of the Object in Corrected Myopia. Mazzei, A. Ann. di Ottal. e Cli. Ocul. (Italian), p. 974, 1924.

Under a different and somewhat lengthy title, Mazzei reports that from calculations made on the Listing schematic eye, he found that the apparent diminution in size of objects complained of by myopes who are using correcting lenses for the first time, is not a dioptric phenomenon, but entirely physical in nature. In other words, the retinal impression is not smaller in size than it was before correction, but an erroneous estimate of its size is formed by the patient.

G. L. DuP.

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DR. JACK I. KURTZ, Room 209 Yeates Building, Minneapolis, Minnesota.

The Journal has no objection to the reprinting by other magazines of any of its articles, provided such reprints are properly credited to the American Journal of Optometry.

THE VISUAL SURVEY AND SERVICE CORPORATION—AN OPPORTUNITY

Dr. F. P. Barr, optometrist and educator of national repute, has on the 19th day of January of this year issued the call for the formation of the educational organization with the above name, commonly called the National Clinic.

This is, without a doubt, the greatest educational and service building opportunity ever offered to the optometric profession. It is an opportunity that will come only once in the lifetime of the average optometrist and it marks without question a turning point in optometric life.

The men accepted and enrolled in this splendid work will become professional leaders in their community lives, because of their superior training, and it should be of greatest value to these men in enlarging their practices. We urge our readers to carefully read over and to study the following announcement.

The National Clinic

"For the past decade there has been a growing tendency and demand for educated and practical men to do visual survey in our schools, industries, and now coming to the motorists. Changes come fast. The ambitious and energetic are alert to meet these various conditions. Optometry and ophthalmology are anxious to do the vast amount of work before them, but many realize their inefficiency and inability to individually cope with this problem. I believe if opportunity is given a large number will gladly and willingly become affiliated with a national movement for education. Acceptance of this program calls for application, sacrifice, and financial backing. If these fundamentals are to be obtained, I am certain the results and reward is really beyond the comprehension of many at this time. Past experience has placed me, together with competent associates, in a position to thoroughly and satifactorily serve you. The question that remains to be definitely answered now is, 'How many will take advantage of this work if the opportunity is afforded?'

"Dr. Woll of Columbia University together with able assistants from other universities and colleges are willing to inaugurate and promote a course covering a period of two years. This course will be both verbal and by correspondence. The instructors will at certain specified times go through the field and meet the units enrolled. This will be beyond doubt the greatest piece

of constructive work ever attempted. To insure its successful operation, we must have a minimum enrollment of six hundred substantial, professional men. A larger number, of course, will enable us to conduct a more vigorous campaign and naturally, ultimately bring about greater achievement. If this number, or more, are enrolled, I will make an annual tour of the entire country and place a proper understanding of our work, of the services we anticipate rendering to education, industry and to the motorist before our civic organizations, parents' and teachers' associations, and others. This will prepare the field for future activities after our educational program has been completed and will enable us to render a service to needy humanity, such as heretofore has never been afforded.

"If a number is secured, such as asked for, we will also be in a position to edit and distribute a journal termed 'Modern Vision' to all whom we hope to serve, explaining the nature of our work, how it should be accomplished and the type of men to be engaged in the performance of this work. Twenty-five or fifty thousand of these journals distributed monthly, together with my field work, will certainly promote an interest for the professions and public, such as has never heretofore been accomplished. This course can go over. When it does those who participate will be charter members of a National Clinic, have access to a scientific research bureau, and other items of interest, all of which will belong to this national visional survey and service association.

"In three to five years perhaps our colleges and universities will be doing this type of work as a part training for all graduates in refraction. The practitioner of today must follow some plan, whether as we have outlined or some other, in order to be prepared to cope with the graduates of the future. Are you willing to enroll and spend two hundred dollars in two years—fifty dollars each six months to secure this education and promote a national service? We are leaving this matter entirely up to the professions, State and National Associations to determine whether or not we are to go ahead. If you are willing to proceed, make it manifest by sending your name, address, nature of your past schooling, type of practice now engaged in and your check dated April 1 for $50.00. The next sixty days beginning February 1 must determine our attitude in this whole matter. If only fifteen practitioners of honor and integrity from each of the various states will enroll the course is assured. We are already in a position to state that several states have promised twenty-five to fifty. Will you kindly mail your name and check, etc., as above asked for, to the writer, F. P. Barr, 406 Ward Building, Rochester, New York. In case six hundred applications are not received, your check will be returned April 1.

"In closing may we again state that individually you cannot succeed in this work, collectively we can. We await your verdict.

"Respectfully yours,
F. P. Barr."

January 19, 1926.

* * *

This offer not only gives us a chance to broaden our scope of refractive knowledge by contact with the educational leaders of our profession, but it gives us a chance to do a very needed bit of work, that of visual surveys in industry. The experience gained and contacts made in performing these surveys will prove invaluable to any practitioner.

The iron is hot—now is the time to strike. Dr. Barr and Professor Woll have called for your support, the leaders of the profession have endorsed the project; it not only is feasible, but it is so well planned that nothing can stop it. We join in urging our readers to at once correspond with Dr. Barr and to show him the faith they have in him by "enclosing the required check."

—C. C. K.

REPORTS AND ANNOUNCEMENTS OF SOCIETIES

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A. S. ANDERSON, North Dakota
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Reports of Society Proceedings in Iowa should be sent to Dr. D. A. Kinney, Charles City; in Maryland to Dr. J. F. Andreae, Baltimore; in Minnesota to Dr. H. B. Kollofski, St. Paul; in Nebraska to Dr. C. A. Perrigo, Freemont; in North Dakota to Dr. A. S. Anderson, Williston, and in Oklahoma to Dr. E. B. Alexander, Duncan.

MINNESOTA STATE CONVENTION

The twenty-sixth annual convention of the Minnesota State Association will be held on Monday and Tuesday, the 15th and 16th of February, at the Ryan Hotel, St. Paul. A very interesting and instructive program has been arranged.

Dr. Thomas G. Atkinson, well known author and lecturer of Chicago, and Dr. Arthur E. Hoare, member of the faculty of the Los Angeles School of Optometry, will be the chief lecturers. A series of postgraduate clinics will be conducted, where the latest and most modern methods of examining eyes will be demonstrated.

The optometrists of the state are looking forward with great interest to this event and anticipate attending in large numbers. According to Dr. J. I. Kurtz, secretary, a record attendance is expected from the advance information reaching his office.

Dr. Fred A. Zimmerman, general convention chairman, states that the committees are at work trying to make this the best convention in the history of the association.

A two-day program has been arranged for as follows:

Monday, February 15th

9:00 A. M. to 10:30 A. M.—Registration. Badges. Banquet tickets. Payment of dues.
10:30 A. M.—President's Opening Address by Dr. Chas. G. Mack.
10:45 A. M.—Lecture, "Eyes and the Man," by Dr. T. G. Atkinson.
2:00 P. M. to 3:30 P. M.—Postgraduate Clinics conducted by Dr. A. E. Hoare.
3:30 to 5:00 P. M.—Lecture, "The Perimeter and Its Diagnostic Value in Refraction," by Dr. T. G. Atkinson.
7:30 P. M.—Business session: Secretary's report. Committee reports. Election of Officers.

Tuesday, February 16th

9:30 A. M. to 10:30 A. M.—Lecture, "Prisms in Myopia and Presbyopia," by Dr. A. E. Hoare.
10:30 A. M.—Welcome Address by Mayor Arthur E. Nelson, St. Paul.
11:00 A. M. to 12:00 M.—"Optometric Legislation," by Col. Orvel Johnson, attorney for the A. O. A.
2:00 P. M. to 3:30 P. M.—"Postgraduate Clinics," by Dr. Arthur E. Hoare.
3:30 to 5:00 P. M.—Unfinished business.
6:30 P. M.—Banquet, Ryan Hotel.
9:00 P. M.—Dancing.

MINNEAPOLIS SOCIETY

The January meeting of the Minneapolis Association of Optometrists was very successful. The attendance was good and five short but splendid papers were presented. These will appear from time to time in this journal. Dr. L. L. DeMars presided, while Drs. J. E. Peterson, E. Markhus, A. Nordstrom, C. Nelson and J. I. Kurtz read their papers dealing with accommodation and near and far point tonacity and duction tests. Many interesting cases were presented, all present taking part in the discussions.

THE MARYLAND ASSOCIATION

On Sunday, January 24th, sixty-two representative optometrists of Maryland, Wilmington, Delaware and Washington, D. C., gathered in Baltimore for the purpose of attending lectures delivered by Dr. R. M. Peckham, Waterbury, Conn., and Dr. H. C. McClung, Regina, Sask., Canada.

Dr. Peckham's lecture was on the extrinsic eye muscles, laying particular stress on prescribing prisms base in in case of myopia, citing a number of cases where the power of the minus lens was materially reduced when used in combination with prisms. He advanced some revolutionary ideas in the use of prisms and unquestionably supplied considerable food for thought.

Dr. McClung delivered an interesting lecture on subjective skiascopy.

The meeting started at 10:00 A. M. At 1:00 P. M. adjournment was made to the Hotel Rennert, where a very satisfying dinner was served. Meeting was resumed at 2:00 P. M. and continued until 6:00 o'clock.

The idea of holding the meeting on Sunday was in the way of an experiment as it was thought a number of men who found it impossible to attend weekday sessions (particularly those out of town) would attend. The idea worked out beautifully as was proven by the fact of men coming who lived one hundred miles or more away.

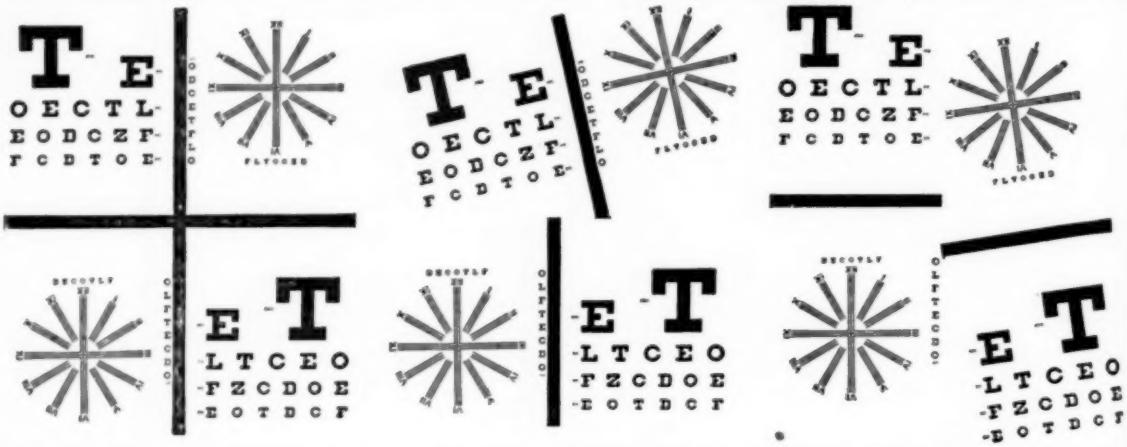
TENNESSEE STATE CONVENTION

Dr. W. Fred Gates, Secretary of the Tennessee State Association, has recently sent out a call to all the members to meet at the annual convention which will be held at Chattanooga on the 26th and 27th of February. Dr. Gates claims that plans are being worked out to make this the most successful convention ever held by the association. A record attendance is expected.

NEBRASKA STATE CONVENTION

The nineteenth annual convention of the Nebraska State Association was held at the Rome Hotel, Omaha, January 28th and 29th. A very interesting and educational program was arranged for. Dr. A. E. Hoare conducted two postgraduate clinics. Dr. W. A. Mendelshon lectured on High Visibility in Optometric Science. Mr. Geo. Carey, Secretary of the Safety Council, spoke on Optometry's Part in Making the World Safe.

Dinner, dance and theater party were the entertainment features of the convention.



You get a case that has been the rounds of "all the good specialists in the city"; no glasses have been found that give relief. You seat the patient before a chart like the above and bring the Hemisensory Binoculometer into position: promptly the patient reports conditions as depicted above. You at once recognize it to be esophoria, associated with a great cyclophoria. It is unmistakable, all doubt is thrown to the four winds.

You now turn the instrument to make vertical test; the cyclophoria is again shown, associated with right hyperphoria. Ah! plus lenses **removed** the esophoria but the cyclophoria and the hyperphoria remained unchanged. What should you do? Can you give this patient comfort?

CERTAINLY YOU CAN; the H. B. test has shown you conclusively that the plus lenses remove the esophoria,—**that accommodation and convergence are working in harmony**; all that remains is to correct the hyperphoria with prisms incorporated in the prescription for glasses AND THE CYCLOPHORIA WILL DISAPPEAR,—and your patient will be happy, and so will you.

THE H. B. TEST BRINGS HAPPINESS TO BOTH THE PATIENT AND THE DOCTOR EVERY TIME; order today.

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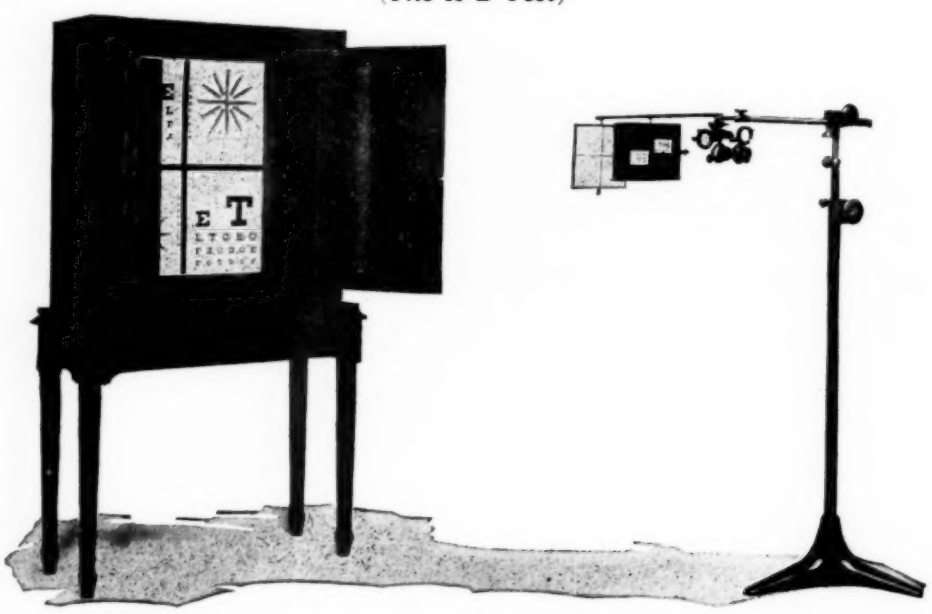

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